



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,553	11/19/2003	Katsuji Mukaihara	N0029.1649	5051
32172	7590	03/10/2006	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP 1177 AVENUE OF THE AMERICAS (6TH AVENUE) 41 ST FL. NEW YORK, NY 10036-2714			NGUYEN, TUAN N	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

3/1

Office Action Summary	Application No.	Applicant(s)	
	10/715,553	MUKAIHARA ET AL.	
	Examiner	Art Unit	
	Tuan N. Nguyen	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 10-14 is/are rejected.
- 7) ☒ Claim(s) 6-9, 15-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/19/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION
Response to Amendment

1. In respond to applicant's amendment filed 02/01/2006, claims 1, 5, and 10 have been amended. Claims 1-14 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of 35 U.S.C. 102(b) which forms the basis for all obviousness rejections set forth in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 10-12 are rejected under 35 U.S.C. 102(b) as being unpatentable over Chang et al. (US 5978407).

With respect to claims 1, 10 Chang et al. '407 shows and discloses a diode-pumped solid-state laser rod (Col 3: 50-60), wherein: device used side-pump a cooling tube (Fig 2: 10, 20, water jacket) to cool said laser rod with the use flowing water is provided coaxially so as to surround said laser rod (Col 3: 20-35)(Fig 7b: water jacket, coolant passage); and said cooling tube is provided with a antireflection area (Fig 2: 24)(Col 3: 44-45, pumping light channel)(Col 4: 35-40) for pumping light on a portion of an outer surface thereof (Fig 4a: 28, b), and with a high reflection area for the pumping light on another portion of the outer surface of which said antireflection area is absent (Fig 2: 34, 24, 22)(Fig 5a-6b) (Col 4: 63-67). Since claim 10 recites the same or identical elements/limitations it is inherent to use patents '407 to recite the method of manufacturing side pump laser device, product by process.

Art Unit: 2828

With respect to claims 2-3, 11-12 Chang et al. '407 shows a pumping laser diode is placed in such a manner so as to prevent an optical axis of the pumping light that passes through said antireflection area and goes incident on said laser rod from intersecting with a central axis of said laser rod (Fig 5A: 60, laser beam line intersecting center of laser rod). The antireflection areas provided to a plurality of places along a circumferential direction of said outer surface (Fig 2: 24)(Col 3: 44-45, pumping light channel)(Col 4: 35-40).

With respect to claims 4, 13 said antireflection area is provided to plurality of places at equal intervals along the circumferential direction (Col 5: 22-35)(Fig 2: 24, pumping light channels).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

Art Unit: 2828

5. Claims 5, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig 1) (US 2004/0101004).

With respect to claims 5, 14 Applicant discloses in the Prior Art (Fig 1) the solid state pump laser with cooling tube cooling the laser rod [section 0005-0006] having high reflection area, with antireflection area provided a plurality of places along a circumferential direction of said outer surface (Fig 1: 16). The claim further requires an antireflection area comprises an antireflection coating, and the high reflection area comprises a high reflection coating. Applicant's Prior Art (Fig 1) [Section 0005-0006] discloses antireflection coating (Fig 1: 17), and diffusion reflector [section 0006](Fig 1: 15). It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, in this case is the diffusion reflector is high reflection area to reflect the laser back into the core for absorption. *In re Aller*, 105 USPQ 233.

Allowable Subject Matter

6. Claims 6-9, 15-18 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The references of the record fail to teach or suggest the laser device and the method of manufacturing thereof:

Claims 6, 15:

A solid-state side pump laser comprising water cooling tube having an antireflection area on a portion of an outer surface, and a pumping laser is pumping light

Art Unit: 2828

through a plurality antireflection areas and intersecting with the laser rod, *wherein the high reflection coating is covered with an antireflection coating.*

Claims 7, 16:

wherein the antireflection area includes antireflection coating alone, and the high reflection area includes high reflection coating and said antireflection coating.

Claims 8, 17:

wherein the cooling tube having a scattering surface on an inner surface.

Claims 9, 18:

wherein a scattering surface is provided on an outer surface of said high reflection area.

Response to Argument

7. Applicant's arguments filed on 02/01/2006 have been fully considered but they are not persuasive. The examiner read the claims given their broadest reasonable interpretation consistent with the specification. However, it is not proper to read limitations appearing in the specification into the claim when these limitations are not recited in the claim. See *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994); *Intervet America Inc. v. Kee-Vet Lab. Inc.*, 887 F.2d 1050, 1053, 12 USPQ2d 1474, 1476 (Fed. Cir. 1989). In this case, applicant pointed out that Chang US 5,978,407 fails to disclose that the cooling tube is provided both an antireflective area and a high reflection area. Examiner's stand that Chang '407 (Col 4: 35-40 – channel made of transparent material such as glass or fused silica; or air/empty space that do not reflect the

Art Unit: 2828

light can be considered as antireflective area) discloses that the cooling tube has both antireflective area and high reflection area (Fig 2: antireflection area 24; glass; diffuse reflection coating). In addition, applicant points out that the coupling structure are reflectively coated and not to the cooling tube and Chang '407 using a side-pumping method which is different from the applicant's device. Chang '407 (Fig 2: diffuse reflection coating) shows the reflection coating also in the cooling tube and it is not relevant the coupling structure having reflective coat. The examiner's stand that the claims do not differentiate the different in pumping method.

Conclusion

8. The prior art made of record and relied upon is considered pertinent to applicant's discloses.

Chang (US 6704341), Phillips et al. (US 5471491).

9. Applicant's arguments filed on 02/01/2006 have been fully considered but they are not persuasive **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

Art Unit: 2828

advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

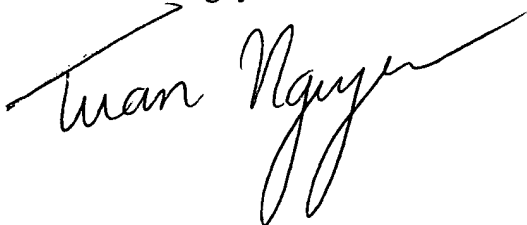
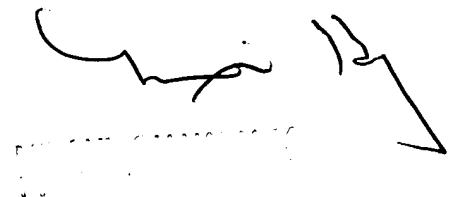
Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harvey Minsun can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan N. Nguyen

A handwritten signature in black ink, appearing to read "Tuan Nguyen", with a long, sweeping horizontal stroke extending to the left.A handwritten signature in black ink, appearing to read "Tuan N. Nguyen", with a long, sweeping horizontal stroke extending to the right. Below the signature is a rectangular stamp, which is mostly illegible but appears to contain the text "Tuan N. Nguyen" and "Art Unit: 2828".